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Three Studies

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RAILROADING



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## Three Studies in Railroading.....

“Building the Road”

By General G. M. Dodge

“Driving the last Spike”

By the late Sidney Dillon

“The West and the Railroads”

By the late Sidney Dillon

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## Three Studies in Railroading.....



### “Building the Road”

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# BUILDING THE UNION PACIFIC.

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PAPER READ BY GENERAL G. M. DODGE BEFORE THE SOCIETY OF THE ARMY OF THE TENNESSEE,  
AT ITS TWENTY-FIRST ANNUAL REUNION, TOLEDO, OHIO, SEPTEMBER 15TH, 1888.

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*Mr. President and Companions of the Army of the Tennessee:*

“Habit,” says Carlyle, “is the deepest law of nature; it is our supreme strength.”

Likewise to use the words of a compeer of Carlyle: “In a great majority of things, habit is a greater plague than ever afflicted Egypt.”

I hasten to add my endorsement to both these observations. Nothing less than the truth contained in the former, I think all here who know me will admit, could support one like myself, whose life-long pursuits unfit him for the *rôle* I have to accept and subject him to the keen edge of the truth contained in the latter, in obeying such an order as the following:

FIFTH AVENUE HOTEL,  
NEW YORK, May 14, 1888.

*General G. M. Dodge, No. 1, Broadway :*

DEAR GENERAL—The receipt this morning of the Annual Report of the proceedings of the Society of the Army of the Tennessee, at Detroit, Sept 14th and 15th, 1887, reminds me that our next meeting will be at Toledo, Ohio, Sept. 15th and 16th, 1888, and that it is my duty to name two "members" to read at that meeting papers of interest and value for future historic reference. After scanning the list of living members, with a full knowledge of what has gone before, I have settled on you, and Surgeon Hartshorn, of Cincinnati. You can choose your own subject and what I add is mere suggestion. The civil war which we shared was only a link in the great chain of our national development. Important events preceded that war which have plainly crystalized into history; the world did not stop, but went on, and you were directly an agent in the consequences. The Pacific States had to be brought into clear harmony with the older Eastern communities, and you did much to build up the Union and Central Pacific railroads, the pioneers, followed by four other transcontinental lines, now in full operation. On this subject you can say much that will have "historic interest."

I ask you to do this, and it will be printed and perused by thousands in the great future who cannot hear it read, but who will be edified long after you and I are gone.

Simply write me that you will be at Toledo, Sept. 15, and I will assure you of all else.

As ever, your friend, W. T. SHERMAN.

But I derive encouragement to proceed when I reflect on the happy issue of the many seemingly desperate enterprises undertaken in the past at the bidding of our commander, to whose orders we all learned, a quarter of a century ago, to yield unquestioning obedience. More than a quarter of a century ago I learned to trust in his judgment, rather than my own, and my confidence is all the greater, since I know from experience and observation something of his capacity for correct judgment in these matters, as well as in those that were dominant during the war.

I recall the fact that it was in a measure, under his auspices, if not his orders, that I proceeded from my post in the army to that of which I am now required to make report. Let me read the documentary proof of this, as well as his words of approval when the work was done:

HEADQUARTERS MILITARY DIVISION OF THE MISSISSIPPI,

ST. LOUIS, May 1st, 1866.

*Major-General Dodge:*

DEAR GENERAL—I have your letter of April 27th, and I readily consent to what you ask. I think Gen. Pope should be at Leavenworth before you leave, and I expected he would be at Leavenworth by May 1st, but he is not yet come. As soon as he reaches Leavenworth, or St. Louis, even, I consent to your going to Omaha to begin what, I trust, will be the real beginning of the great road. I start to-morrow for Reily, whence I will cross

## THREE STUDIES IN RAILROADING.

over to Kearney by  
send your letter this  
sage be sent to Gen.  
you soon, I am,

nd, and thence come in to Omaha, where I hope to meet you. I will  
se my request that a telegraph mes-  
ed at Leavenworth. Hoping to meet  
Yours truly,

W. T. SHERMAN, M. G.

After an interval of three years,  
joined he answered as follows :

d Gen. Sherman that the tracks were

WASHINGTON, May 11th, 1869.

*General G. M. Dodge:*

In common with millions, I sat yesterday and heard the mystic taps of the telegraphic battery announce the nailing of the last spike in the great Pacific Road. Indeed, am I its friend? Yea. Yet am I to be a part of it, for as early as 1854 I was Vice-President of the effort begun in San Francisco under the contract of Robinson, Seymour & Company. As soon as Gen. Thomas makes preliminary inspections in his new command on the Pacific, I will go out and, I need not say, will have different facilities from that of 1846, when the only way to California was by sail around Cape Horn, taking our ships 196 days. All honor to you, to Durant, to Jack and Dan Casement, to Reed, and the thousands of brave fellows who have wrought out this glorious problem, spite of changes, storms, and even doubts of the incredulous, and all the obstacles you have now happily surmounted. W. T. SHERMAN, General.

More than this. Turn with me to the first volume of his memoirs, page 79, where he says: "Shortly after returning from Monterey, I was sent by Gen. Smith up to Sacramento City to instruct Lieutenants Warner and Williamson, of the Engineers, to push their surveys of the Sierra Nevada mountains, for the purpose of ascertaining the possibility of passing that range by a railroad, a subject that then elicited universal interest. It was generally assumed that such a road could not be made along any of the immigrant roads then in use, and Warner's orders were to look farther north up the Feather river, or some of its tributaries. Warner was engaged in this survey during the summer and fall of 1849, and had explored to the very end of Goose Lake, the source of Feather river,"—when this officer's career was terminated by death in battle with the Indians.

He was too modest to add, as I have no doubt was the fact, that those instructions were sent at his own suggestions; that that was the first exploring party ever sent into the field for the special purpose of ascertaining the feasibility of constructing a railway on a portion of the line of one of the trans-continental routes; and that the exploration preceded, by at least four years, the act of Congress making appropriations "for explorations and surveys for a railroad route from the Mississippi river to the Pacific ocean," the earlier fruits of which were embodied in thirteen ponderous volumes, printed at the expense of the government.

And still further. The interest thus early manifested, continuing with unabated force, was signalized in the closing days of his official life by a summary of trans-continental railroad construction up to that date, 1883, so exhaustive as to the leading facts that I am at a loss

touching the scope he expects me to give to this paper. This summary may be found in Gen. Sherman's last report to the Secretary of War, including the exhaustive statistics of Col. Poe. (Ex. Doc. 1, part 2, XLVIIIth Congress, 1st Session, pages 46-47 and 253-317.)

Under all the circumstances, therefore, I must assume that he expects me to confine my remarks to something of an elaboration of the details of the construction of those lines with which I was personally identified, more especially that which first of all linked the two oceans together.

Before proceeding with this, however, a single observation in reference to the priority of claim may not be uninteresting or out of place.

In Gen. Sherman's summary, referred to above, it is stated that "it would now be impossible to ascertain who was the first to suggest the construction of a railway to connect the eastern portion of our country with the Pacific coast. It is probable that the idea in some form occurred to several persons. Very recently Mr. E. V. Smalley, in his 'History of the Northern Pacific Railroad,' has presented the claim of Dr. Samuel Bancroft Barlow, of Granville, Mass., to this distinction, details the evidence upon which the claim is founded, and shows that as early as 1834 (possibly in 1833) Dr. Barlow advocated the construction of a railroad from New York to the mouth of the Columbia river, by direct appropriations from the treasury of the United States. But in presenting this claim to priority, is it not possible that the fact has been overlooked that Dr. Barlow's paper in the *Intelligencer*, of Westfield, Mass., was called forth by a series of articles upon the same subject, published in the *Emi*

*grant*, of Washtenaw county, Michigan Territory? And is not, therefore, that unknown writer of those articles really entitled to whatever credit attaches to priority of suggestion?"

While this statement is true, so far as we are now able to ascertain, it is a singular fact that, before a mile of railroad was laid in any part of the world, a design for connecting the Atlantic with the Pacific ocean by means of steam-carriage was broached, if we can believe the following statement, which I quote from the memorial of Robert Mills, of February 18, 1846 (H. R. Doc. 173, XXIXth Congress, 1st Session):

"The author has had the honor of being, perhaps, the first in the field to propose to connect the Pacific with the Atlantic by a railroad from the head navigable waters of the noble rivers disemboguing into the ocean. In 1819 he published a work on the internal improvement of Maryland, Virginia and South Carolina, connected with the intercourse of the states of the West.

"The following extract from this work will present the idea then formed, both of the practicability and importance of this intercourse to the nation," etc., etc.

Then follows a description, enclosed by quotation marks, of a scheme of steam locomotion between the head-waters of the drainage of the Mississippi valley, and that of the valley of the Columbia, too long for repetition on an occasion like this.

I shall confine my paper to the acts and works of those who first took hold, as citizens, and in a private capacity built the Pacific roads.

When I first saw the country west of the Missouri river it was without civil government, inhabited almost exclusively by Indians. The few white men in it were voyagers, or connected in some way with the United States army. It was supposed to be uninhabitable, without any natural resources or productiveness, a vast expanse of arid plains, broken here and there with barren, snow-capped mountains. Even Iowa was unsettled west of the Des Moines river.

It cost the government in those days from one to two cents per pound to haul freight one hundred miles to supply its posts; and I was at one time in the country between Humboldt and the Platte nearly eight months without seeing a white man other than my own employés.

Now, from the Missouri river to the Pacific, from the Red river and the Rio Grande to the British Possessions, the territory is all under civil law.

The vast region is traversed its entire length by five great trans-continental lines of railroad. There is hardly a county in it not organized, and it is safe to say that there is not a township that is without an occupant. Its plains teem with all the products grown east of the Missouri river. It has become the great corn and wheat producing belt of the United States; its mountains are the producers of millions upon millions of the precious ores, and from every range and valley iron and coal, in immense quantities, are being mined.

It is said that a railroad enhances ten times the value of the country through which it runs and controls, but the value of this country has been enhanced hundreds of times. The government has reaped from it a thousand-fold for every dollar it has expended; and the

Pacific roads have been the one great cause that made this state of affairs possible. The census of 1890 will place, in this territory, fifteen millions of people, and in twenty years it will support forty millions.

It is difficult, I doubt not, for you to comprehend the fact that the first time I crossed the Missouri river was on a raft, and at the point where stands the city of Omaha to-day. That night I slept in the "tepec" of an Omaha Indian.

When I crossed my party over to make the first explorations not one of us had any knowledge of Indians, of the Indian language, or of plains-craft. The Indians surrounded our wagons, took what they wanted, and dubbed us "squaws." In my exploring, ahead and alone, I struck the Elkhorn river about noon. Being tired I hid my rifle, saddle and blanket, sauntered out into a secluded place in the woods with my pony and lay down to sleep. I was awakened and found my pony gone. I looked out upon the valley, and saw an Indian running off with him. I was twenty-five miles from my party and was terrified. It was my first experience for I was very young. What possessed me I do not know, but I grabbed my rifle and started after the Indian, hallowing at the top of my voice. The pony held back, and the Indian seeing me gaining upon him, let the horse go, jumped into the Elkhorn and put that river between us.

The Indian was a Pawnee. He served under me in 1865, and said to me that I made so much noise he was a "heap scared."

Within a radius of ten miles of that same ground to-day are five distinct lines of railroad, coming from all parts of the country, concentrating at Omaha for a connection with the Union Pacific.

The first private survey and exploration of the Pacific railroad was caused by the failure of the Mississippi and Missouri, now the Chicago, Rock Island and Pacific railroad, to complete its project.

The men who put their money in that enterprise conceived the idea of working up a scheme, west of Iowa, that would be an inducement to capital to invest in carrying their project across Iowa to the Missouri river. They also wished to determine at what point on the Missouri the Pacific railroad would start, so as to terminate their road at that point. The explorers adopted Council Bluffs, Iowa, as the point. All roads crossing the state for years ended their survey at that point, and all roads now built connect with that point. These explorations, commenced by me in 1853, were continued each year until 1861, when the result was seen in the framing of the bill now known as the "Law of 1862."

After this bill was passed, the Union Pacific Company was organized at Chicago, Sept. 2d, 1862, and Reed, Dey and Brayton made reconnoissances east of the mountains, Reed confining his work to the crossing of the mountains to reach the Great Salt Lake basin. The effort to engage capital in the road was a failure, and work was suspended.

During the explorations in 1856 or 1857 I happened to return to Council Bluffs, where Mr. Lincoln chanced to be on business. It was then quite an event for an exploring party to

reach the state. After dinner, while I was sitting on the stoop of the Pacific House, Mr. Lincoln came and sat beside me, and in his kindly way and manner was soon drawing from me all I knew of the country west and the result of my surveys. The secrets that were to go to my employers, he got, and, in fact, as the saying there was, he completely "shelled my woods." President Lincoln, in the spring of 1863, sent for me to come to Washington.

When I received the summons from Gen. Grant at Corinth, Miss., to repair to Washington, giving no reason, it alarmed me. I had armed, without authority, a lot of negroes and organized them into a company to guard the Corinth contraband camp. It had been pretty severely criticised in the army, and I thought this act of mine had partly to do with my call to Washington; however, upon reaching there and reporting to the President, I found that he recollected his conversation on the Pacific House stoop; that he was, under the law, to fix the eastern terminus of the Pacific road; and, also, that he was very anxious to have the road commenced and built, and desired to consult me on these questions. He finally fixed the terminus at Council Bluffs, Iowa.

In the discussion of the means of building the road I thought and urged that no private combination should be relied on, but that it must be done by the government. The President frankly said that the government had its hands full. Private enterprise must do the work and all the government could do was to aid. What he wished to know of me was, what was required from the government to ensure its commencement and completion. He said it was a military necessity that the road should be built.

## THREE STUDIES IN RAILROADING.

From Washington I proceeded to New York and after consulting there with the parties who had the question of the bill on the table was drawn. In due time it passed, and under it the Union and Central railroads, constituting one continuous line, were built.

In the fall of 1864, after the fall of Atlanta and while on my return from City Point, where I had been to visit General Grant for several weeks, the Commander-in-Chief sent me back by the way of Washington to see the President.

While the President referred to the progress, and the result of my former visit, he gave it very little thought, apparently, and his great desire seemed to be to get encouragement respecting the situation around Richmond, which just then was very dark. People were criticising Grant's strategy, and telling how to take Richmond. I think the advice and pressure on President Lincoln were almost too much for him, for during my entire visit, which lasted several hours, he confined himself, after reading a chapter out of a humorous book (I believe called the "Gospel of Peace"), to Grant and the situation at Petersburg and Richmond.

After Atlanta, my assignment to a separate department brought the country between the Missouri river and California under my command, and then I was charged with the Indian campaigns of 1865 and 1866. I traveled again over all that portion of the country I had explored in former years, and saw the beginning of that great future that awaited it. I then began to comprehend its capabilities and resources, and in all movements of our troops and scouting parties I had reports made upon the country—its resources and topography; and I,

myself, during the two years, traversed it east and west, north and south, from the Arkansas to the Yellowstone and from the Missouri to the Salt Lake basin.

It was on one of these trips that I discovered the pass through the Black Hills, and gave it the name of Sherman in honor of my great chief. Its elevation is 8,236 feet, and for years it was the highest point reached by any railroad in the United States. The circumstances of this accidental discovery may not be uninteresting to you.

While returning from the Powder river campaign I was in the habit of leaving my troops and train, and, with a few men, examining all the approaches and passes from Fort Fetterman south over the secondary range of mountains known as the Black Hills, the most difficult to overcome with proper grades of all the ranges, on account of its short slopes and great height. When I reached the Lodge Pole creek, up which went the overland trail, I took a few mounted men—I think, six—and with one of my scouts as guide, went up the creek to the summit of Cheyenne Pass, striking south along the crest of the mountains to obtain a good view of the country, the troops and trains at the same time passing along the east base of the mountains on what was known as the St. Vrain and the Laramie trail.

About noon, in the valley of a tributary of Crow creek, we discovered Indians, who, at the same time, discovered us. They were between us and our trains. I saw our danger and took means immediately to reach the ridge and try to head them off, and follow it to where the cavalry could see our signals. We dismounted and started down the ridge, holding the Indi-

ans at bay, when they came too near, with our Winchesters. It was nearly night when the troops saw our smoke signals of danger and came to our relief; and in going to the train we followed this ridge out until I discovered it led down to the plains without a break. I then said to my guide that if we saved our scalps I believe we had found the crossing of the Black Hills—and over this ridge, between the Lone Tree and Crow creeks, the wonderful line over the mountains was built. For over two years all explorations had failed to find a satisfactory crossing of this range. The country east of it was unexplored, but we had no doubt we could reach it.

In 1867, Gen. Augur, Gen. John A. Rawlins, Col. Mizner and some others crossing the plains with me, reached the point where I camped that night. We spent there the 4th of July, and Gen. Rawlins made a remarkable speech commemorating the day. We located there the post of D. A. Russell and the city of Cheyenne. At that time the nearest settlement was at Denver, 150 miles away; and while we lay there the Indians swooped down on a Mormon train that had followed our trail, and killed two of its men; but we saved their stock, and started the graveyard of the future city.

The explorations by the government for a Pacific railroad are all matters of official report, long since published and open to all. They were the basis for the future explorations of all the trans-continental lines, except the Union Pacific, then known as that of the 42nd parallel of latitude. That line, and the country from the Arkansas to the Yellowstone was explored and developed mainly by private enterprise, and it is by far the most practicable

crossing the continent—the shortest, quickest, of lightest curvature and lowest grades and summits. It is not, in an engineering point of view, the true line from the Atlantic to the Pacific, but in a commercial point of view, it is.

In an engineering point of view we demonstrated, before the year 1860, that the true line was up the Platte to its forks, to which point the Union Pacific is now built, then up the North Platte and Sweetwater to the South Pass, and then down the Snake river (where the Oregon Short Line now runs), to the Columbia and then to tide-water at Portland. The Union and Central were built for commercial value, and to obtain the shortest and quickest line from ocean to ocean.

The line of the Central was controlled almost entirely by the development of the mining industries in California and Nevada until it reached the Humboldt; then its natural course would be to reach Salt Lake and the Mormon settlements. The Union Pacific objective point was the Pacific coast by the way of the Great Platte valley and Salt Lake.

Every mile of the Pacific roads that received subsidies from the government, had to have the approval of the government three different times, through its selected officers, before one cent could be received or one acre of land certified.

1st. The preliminary survey, showing the general route of the line, had to be accepted as in compliance with the law and satisfactory to the President.

2d. As each section of 50 or 100 miles was finally located on the ground, this being the actual line to be built upon, which could not be deviated from, it had to be filed on the In-

## THREE STUDIES IN RAILROADING.

terior department

Finally, when  
law, the United States  
not only all material  
when behind all other  
law, to disapprove what  
been constructed.

ceive the approval of its Secretary, and the Great Seal of the country.

Completed and equipped as required by  
sent on the part of the government, who examined again,  
s met the requirements of the act, and its road as constructed, but  
approvals that had been given, and assumed the right of might, not  
what had before been approved and upon which approval the road had

For the sake of peace and to avoid delays we submitted and made any changes demanded, which, to their credit I must say, were very few. The grades, the road-beds, the cuts, fills, bridges, ties, rails, spikes, joints—everything had to be up to the standard adopted by the government, a standard adopted on the advice, in several cases, of people who had never seen the country. And, after the road was completed, in many cases it had to be changed to overcome one great obstacle that one unacquainted with the country would never dream of—the question of snow. We had to study every summit, every mountain side, every valley, to find from the currents which was the snowy side and which the barren; and over the whole 1,500 miles of line located for the Union Pacific, for three winters we kept engineers in tents or dug-outs watching from four to six months the drift of the snow and water to be overcome, and the safest, surest and most effectual methods of doing it.

The charter of 1884 provides that the loan in bonds shall change \$16,000 a mile to \$32,000 at the east base of the Rocky mountains and the west base of the Sierra Nevada.

When we reached the mountains a series of questions arose as to how this base should be determined. The eastern base was determined by Mr. Blickensderfer, who was appointed by the government. After examining the country, he declared it to be right at the foot of the mountains, where the heavy grades to overcome the first range, the Black Hills, were made necessary—a very proper decision.

The west base of the Sierra was located near Sacramento, where the drift of the mountains reached into that valley, or where, you might say, the first approach to the mountain begins, but long before the heavy grades commenced.

A good story is told, the truth of which I will not undertake to vouch for, in relation to the fixing of the base.

By the original railroad act, as we have noticed, the President was to fix the point where the Sacramento valley ended and the foot-hills of the Sierra Nevada began. Chief Engineer Judah, in his report, had designated Barmore's, thirty-one miles from Sacramento, as the beginning of the mountains. This corresponded with a decision of the Supreme Court of the United States, made in April, 1864, in the case of the Liedsdorff grant. This grant, by Mexican authority, was bounded by the foot-hills on the east. The contestants of the grant attempted to fix the eastern boundaries at Alder creek, eight miles nearer Sacramento. The Supreme court decided the foot-hills commenced about thirty miles from that city. Several attempts were made by Mr. Sargent, then a member of Congress and since United States

Senator, soon after the passage of the original act, to bring the attention of President Lincoln to this subject, but the President's constant occupation with weightier duties forced upon him by the great war, prevented his action. The time, however, came when it could no longer be delayed.

Owing to the increase of subsidy among the hills and mountains, it was important to the railway company that the foot-hill should begin as near as possible to Sacramento. The senator claims the credit of moving the mountains from Barmore's to Arcade creek, a distance of twenty-four miles. His relation of the affair to his friends is this: Lincoln was engaged with a map when the Senator substituted another, and demonstrated by it and the statement of some geologist that the black soil of the valley and the red soil of the hills united at Arcade. The President relied on the statements given him, and decided accordingly. "Here, you see," said the Senator, "how my pertinacity and Abraham's faith removed mountains."

Reconnoissances made in 1862-63-64 had demonstrated that a serious question would arise in reaching the Hum'oldt valley from the western foot of the Wahsatch mountains in the Salt Lake basin. Should the line go north or south of the lake? The Mormon church and all of its followers, a central power of great use to the trans-continental roads, were determinedly in favor of the south line. It was preached from its pulpits, and authoritatively *announced* that a road could not be built or run north of the lake. But our explorations in *earlier day unqualifiedly indicated* the north side, though an exhaustive examination was

made south and only one line run north, it being our main line to the California State line surveyed in 1867.

The explorations by parties south of the lake, and the personal examinations of the chief engineer, determined that it had no merits as compared with the north line; and on such report the north line was adopted by the company and accepted by the government.

Brigham Young called a conference of his church and refused to accept the decision; prohibited his people from contracting or working for the Union Pacific, and threw all his influence and efforts to the Central Pacific, which just at that time was of great moment, as there was a complete force of Mormon contractors and laborers in Salt Lake valley competent to construct the line 200 miles east or west of the lake, and as the two companies had entered into active competition, each respectively to see how far east or west of the lake they could build, that city being the objective point and the key to the control of the commerce of that great basin.

The Central Pacific Company entered upon the examination of the lines long after the Union Pacific had determined and filed its line, and we waited the decision of their engineers with some anxiety. We knew they could not obtain so good a line, but we were in doubt whether, with the aid of the Mormon church and the fact that the line south of the lake passed through Salt Lake City, the only commercial capital between the Missouri river and Sacramento, they might decide to take the long and undulating line; and then would arise the question as to which (the one built south, the other built north, and it would fall to the

government to decide) should receive the bonds and become the trans-continental line. However, the engineers of the Central Pacific, Clements and Ives, took as strong ground, or stronger than we in favor of the north line, and located almost exactly upon the ground the Union Pacific had occupied a year before; and this brought the Mormon forces back to the Union Pacific, their first love.

The location of the Union Pacific was extended to the California State line, and that of the Central Pacific to the mouth of Weber Cañon. The Union Pacific work was opened and most of the line graded to Humboldt Wells, 219 miles west of Ogden, and the Union Pacific met the track of the Central Pacific at Promontory Summit, 1,186 miles west of the Missouri river, and 638 miles east of Sacramento, on May 9, 1869, to the wonder of America, and the utter astonishment of the whole world—completing the entire line seven years before the limit of time allowed by the government.

On the occasion of the completion of the road there assembled on the bleak mountain side representatives of nearly all civilized nations. As the last spike was driven, connection was made with every telegraph office between the Atlantic and the Pacific, and every blow was heard throughout the land. To the representatives of the road there came over the wires the congratulations of authorities, officials and eminent people of every country that could be reached by wire, and among them all was one that I prized above all others—the telegram which I have already read in your hearing. You who know what it is to receive commendation and promotion on the field of battle, in the face of your enemy, can appreciate the satisfaction conferred by such a message from such a source.

How well we did our work I leave to the committee, who, after an exhaustive examination of it, submitted its report to the government, to say, as follows :

“ The foregoing shows that the location of the Union Pacific railroad is in accordance with the law, as a whole and in its different parts, the most direct, central and practicable that could be found between Omaha and the head of Great Salt Lake.

“ Taken as a whole, the Union Pacific railroad has been well constructed. The general route for the line is exceedingly well selected, crossing the Rocky mountain ranges at some of the most favorable passes on the continent, and possessing capabilities for easy grades and favorable alignments unsurpassed by any other railway line on similarly elevated grounds. The energy and perseverance with which the work has been urged forward, and the rapidity with which it has been executed are without parallel in history. In the grandeur and magnitude of the undertaking it has never been equaled, and no other line compares with this in the arid and barren character of the country it traverses, giving rise to unusual inconveniences and difficulties and imposing the necessity of obtaining almost every requisite of material, of labor, and of supplies for its construction from the extreme initial point of its commencement.

“ Deficiencies exist, but they are almost without exception those incident to all new roads, or of a character growing out of the peculiar difficulties encountered or inseparably with the unexampled progress of the work, a matter of the greatest importance; creditable to the able managers of the company, and they can all be supplied at an

earthen and other industries. There seems to be no one to furnish the ore to produce.

6. The empire that the roads have made has occupied territory, population, wealth, and power of the Missouri river as measured to-day.

In the last two years the financial power of the empire has been adding to its treasury more than \$100,000,000. It is now developing it, and does not yet know what it will do in any degree what it will in years to come.

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as found in the year 1874—and that government is now making a settlement with its contractors, and claiming that the Canadian Pacific has not yet been brought to that standard.

When we consider that England and its colonies have the reputation of building the most substantial roads in the world, this fact must certainly go to the credit of the builders of the Union Pacific, and is a severe comment upon the attacks that have been made upon the Pacific railroads by our own government and people.

The day for estimating the benefit of these lines to the nation, or comparing them with any one's foresight or predictions of the revolution they would make in the trade, commerce and population of the country, has long since passed.

Some of the benefits derived from the building of these roads are:

1. The change of climate.
2. The bringing under cultivation of millions upon millions of acres of plains-land, making homes for the numerous immigrants to the country.
3. The development of vast mineral belts that now supply the world with gold, silver and copper.
4. The development of immense quantities of coal, anthracite and bituminous, that are already supplying the population and industries between the Missouri river and the Pacific.
5. The discovering, yearly, of immense beds of all kinds of ores that go into the iron, tin,

earthen and other industries. There seems to be no metal that the Rocky mountains cannot furnish the ore to produce.

6. The empire that the roads have made possible will, in the near future, exceed in occupied territory, population, wealth, and savings, all those of the country east of the Missouri river as measured to-day.

In the last two years the financial strides have been remarkable. The government is daily adding to its treasury more than all the interest upon all the sums it has expended in developing it, and does not yet know what it has acquired ; nor does it yet comprehend in any degree what it will in years to come pay into our treasury. It has already built up four great commercial centers, each controlling territory 500 miles in diameter—one on the Missouri river, one in Colorado, one in Salt Lake basin, and one on the Pacific coast ; and three more are in their infancy—one on the Rio Grande, one in Montana and another in Oregon. The banking capital and deposits in these centres illustrate their progress. They amount to over one hundred millions of dollars to-day.

On the completion of the road, at the request of the Board of Directors, we made an estimate of earnings for five and ten years after completion.

By claiming the overland trade of all the British islands, of China and Japan, and taking that of the entire Pacific coast, we estimated the annual earnings in five years at \$5,000 per mile. We gave 80 per cent of this to through traffic, and 20 per cent to local. Within ten years the local development brought the earnings up to \$12,000 per mile, and to-day the

through traffic is not five per cent of its gross earnings. In 1887 the Union Pacific system earned a grand total of \$28,557,766; the Central and Southern Pacific, \$37,930,162; the Atchison, Topeka & Santa Fe, \$18,461,366; the Northern Pacific, \$12,789,447; and the Texas and Pacific, \$6,200,000.

Nearly one-half as much more was earned by local roads that developed a portion of each state and territory, but were not part of the continental system. The trade, traffic and development of that vast empire, not yet thirty-five years old, has passed beyond all figures, and we simply look upon it as two great commercial zones following that other great empire, between the lakes and the Missouri river, whose development has been the admiration and wonder of the world.

The buildings of the Pacific roads has changed the climate between the Missouri river and the Sierra Nevada. In the extreme west it is not felt so much as between the Missouri river and the Rocky mountains. Before settlement had developed it, the country west of the Missouri river could raise very little of the main crops, except by irrigation. From April until September no rain fell. The snows of the mountains furnished the streams with water and the bunch-grass with sufficient dampness to sustain it until July, when it became dried and was the food that sustained all animal life on the plains, summer and winter.

I have seen herds of buffalo, hundreds of thousands in number, feed on the bunch-grass that they obtained by pawing through two feet of snow on the land. It was this feature that induced the stocking of immense ranches with cattle. Buffalo never changed the character of

the grass, but herds of cattle did, so that now, on the ranges, very little of the bunch or buffalo grass remains.

Since the building of these roads, it is calculated that the rain belt moves westward at the rate of eight miles per year. It has now certainly reached the plains of Colorado, and for two years the pioneers of that high and dry State have raised crops without irrigation, right up to the foot of the mountains.

Salt Lake since 1852 has risen nineteen feet, submerging whole farms along its border and threatening the level desert west of it. It has been a gradual but a permanent rise, and comes from the additional moisture falling during the year—rain and snow. Prof. Agassiz, in 1867, after a visit to Colorado, predicted that this increase of moisture would come by the disturbance of the electrical currents, caused by the building of the Pacific railroads and settlement of the country.

The Union Pacific and the Central Pacific were fortunate in selecting a class of young men for their work, some of them hardened by five years' experience in the war, whose whole soul and interest were in it. They commenced first in the exploring and engineering parties, and finally landed as chiefs in some part of the work.

On the Union Pacific were Dey, Reed, Hurd, Blickensderfer, Morris, McCartney, Eddy, House, Hodges, Hudnut, Maxwell, Brown, Appleton, Clark, Hoxie, Snyder, the Casements, and many others under them. Some of them laid down their lives in the work—all reached the end of their term in after years and were builders and operators on all the great trans-continental lines, including the Canadian Pacific.

On the Central Pacific were Judah, Montague, Clements, Ives, Gray, Town, and others that I cannot name. Some of these men have met five times in making connections that completed the great trans-continental lines. I found some of the men who made the first connections at Promontory again at Sierra Blanca, at the joining of the Texas Pacific and Southern Pacific, and still again at Emery's Gap the present year, in connecting New Orleans and the Gulf with Denver. On the Atchison and Topeka and on the Northern as well as on the Canadian Pacific some of the same men took part in laying the connecting rails.

The men who made possible this work, who threw their fortunes, their health, their reputations into it, will one day stand in civil life like our great leaders in the war. Monuments to their enterprise dot the country between the Missouri river and the Rocky mountains, between the Pacific and the Wahsatch. They were the men who had made possible a population, within the next twenty years, between the Missouri river and the Pacific coast, of fifty millions of people. They have been libeled, abused, vilified, and, in some cases, bankrupted and driven to their graves; but their works stand, and their monuments will yet come—the Ames, Dillon, Duff, Durant, Atkins, Dexter, Baker, Dix, Brooks, Stanford, Huntingdon, Hopkins, and Crocker.

I do not state this alone on my own knowledge, but I appeal to the most enthusiastic, the most helpful of all the generals in this great enterprise, one who knew these people, who saw them, who watched them at their work, will tell you that they should deserve the same praise



It took a man of courage and patriotism to make that decision and lay down a reputation and business credit that was invaluable in New England, and one that had come down through almost a century. To him it was worse than death; and it was the blow which, followed by others, put him in his grave.

To emphasize these observations, permit me to quote a brace of paragraphs from a letter dated January 6, 1859, addressed to Hon. John Sherman, M. C., and made public through the *National Intelligencer*. It was from his brother, then unknown to fame, and is even yet one of the most remarkable and instructive short papers to be found in the literature of trans-continental railway construction. He gave many weighty reasons why a railway to the Pacific should be built, but thought it could not be done unless done by the nation. "It is a work of giants," he sententiously declares, "and Uncle Sam is the only giant I know who can or should grapple the subject." That papers alone, in the light of later events, would stamp its author as a far-seeing statesman and an enlightened engineer, and I shall ask his permission to record it as a part of this paper. The following declarations taken from it show how the project was viewed in 1859:

"It so happens that for the past ten years the Sierra Nevada has been crossed at every possible point by miners in search of gold, by emigrants going and coming, and by skillful and scientific men. I, myself, have been along a great part of that range, and have no hesitation in saying that there are no passes by which a railway, to be traveled by the most powerful locomotion now in use, can be carried through the Sierra Nevada, unless at the extreme

Necessity brought out during the war bold structures, that in their rough were models of economy in material and strength. In taking care of direct and lateral strains by positions of posts and braces, they adopted principles that are used to-day in the highest and boldest structures; and I undertake to say that no structure up to date has been built which has not followed those simple principles that were evolved out of necessity, though reported against during the war by the most experienced and reliable engineers of the world.

A few bold spirits backed the enterprise with their fortunes and independent credit. They were called fools and fanatics, and Oakes Ames—the real pluck of the work—said to me once: “What makes me hang on is the faith of you soldiers,” referring, at the time, to the support the army was giving us, led by Grant, Sherman, Sheridan, Pope, Thomas, Augur and Crook, and all who had direct communication with us on the plains. There was nothing we could ask them for that they did not give, even when regulations did not authorize it, and it took a large stretch of authority to satisfy all our demands.

The commissary department was open to us. Their troops guarded us, and we reconnoitered, surveyed, located and built inside of their picket line. We marched to work to the tap of the drum with our men armed. They stacked their arms on the dump and were ready at a moment's warning to fall in and fight for their territory.

Gen. Casement's track train could arm a thousand men at a word; and from him, as a head, down to his chief spiker, it could be commanded by experienced officers of every rank, from general to a captain. They had served five years at the front and over half of the men

### THREE STUDIES IN RAILROADING.

had shouldered a musket in many battles. An illustration of this came to me after our track had passed Plum Creek, 200 miles west of the Missouri river. The Indians had captured a freight train and were in possession of it and its crews. It so happened that I was coming down from the front with my car, which was a traveling arsenal. At Plum Creek station word came of this capture and stopped us. On my train were perhaps twenty men, some a portion of the crew, some who had been discharged and sought passage to the rear. Nearly all were strangers to me. The excitement of the capture and the reports coming by telegraph of the of the burning train, brought all men to the platform, and when I called upon them to fall in to go forward and retake the train, every man on the train went into line, and by his position showed that he was a soldier. We ran down slowly until we came in sight of the train. I gave the order to deploy as skirmishers, and at the command they went forward as steadily and in as good order as we had seen the old soldiers climb the face of Kenesa under fire.

Less than ten years before, Gen. Sherman had suggested a *different* method of disposing of the Indian. Writing to his brother, he said:

"No particular danger need be apprehended from Indians. They will no doubt pilfer and rob, and may occasionally attack and kill stragglers; but the grading of the road will require armies, capable of defending themselves; and the supplies for the road and maintenance, will be carried in large trains of wagons, such as went last year to Salt Lake, and will be guarded by Indians. So large a number of workmen distributed



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along the line will introduce enough whisky to kill off all the India road."

Railroads first built in the United States have been remunerative have grown and been supported mostly by the vast development advance lines are usually bankrupt, but they feed trunk lines by well supported, not because of the amount they can earn for themselves, but their connection, as every pound of delivered freight and every passenger the connection is additional and new business.

The unfriendliness of Congress since 1870, and of all the Western men overcome by the world west of the Missouri river, newly conquered their hostile legislation will soon have its reactionary effect upon themselves. These demagogues who delight to legislate and destroy property that they will soon see the result in their own homes: for these, like the people coming possessed of property and wealth through capital that come to their country.

Railroad investment is creeping west of the lakes, and when the people begin to own or are interested in, no matter how small their interest, they will support it. I look to the day, not far distant, when, in Kansas, Nebraska, and Missouri, it will be as unpopular to legislate to destroy property of transportation as it is today in Ohio, New York, and the New

11. *Chrysomelidae* (10 spp.)

1. The first of the two main points of the report is that the Government has failed to provide adequate protection for the people of the United States against the threat of nuclear war. The second point is that the Government has failed to provide adequate protection for the people of the United States against the threat of economic collapse.

[illegible]

the paper in its appropriate place, leaving to you the final page of the report. The report is the property of the Union and Central Bank and should not be materially changed. It is

As a result of the demand for the then contractor, and builders of the Missouri

river railroad in Iowa, instructed Peter A. Dey to investigate the question of the proper point for the Mississippi and Missouri river road to strike the Missouri river to obtain a good connection with any road that might be built across the continent. I was assigned to the duty, and surveys were accordingly extended to and up the Platte valley to ascertain whether any road built on the central or then northern line would, from the formation of the country, follow the Platte and its tributaries over the plains and thus overcome the Rocky mountains. Subsequently, under the patronage of Mr. Farnam, I extended the examination westward to the eastern base of the Rocky mountains and beyond, examining the practicable passes from the Sangre Christo to the South pass; made maps of the country, and developed it as thoroughly as could be done without making purely instrumental surveys. The practicability of the route, the singular formation of the country between Long's Peak, the Medicine Bow mountains, the Bridger Pass on the south, and Laramie Peak and the Sweetwater and Wind river ranges on the north, demonstrated to me that through this region the road must eventually be built. I reported the facts to Mr. Farnam, and through his and his friends' efforts, the prospect for a Pacific railroad began to take shape.

In after years, when the war demonstrated the road to be a military necessity, and the government gave its aid in such munificent grants, surveys were extended through the country previously explored, its resources developed, its hidden treasures brought to light, and its capabilities for the building of a railway to the Pacific fully demonstrated.

In doing this over the country extending from the Missouri river to the California State

line, and covering a width of 200 miles north and south, and on the general direction of the forty-second parallel of latitude, some fifteen thousand miles of instrumental lines have been run, and over twenty-five thousand miles of reconnoissances made.

In 1863 and 1864 surveys were inaugurated, but in 1866 the country was systematically occupied; and day and night, summer and winter, the explorations were pushed forward through dangers and hardships that very few at this day appreciate, as every mile had to be run within range of the musket as there was not a moment's security. In making the surveys numbers of our men, some of them the ablest and most promising, were killed; and during the construction our stock was run off by the hundred, I might say by the thousand, as one difficulty after another arose and was overcome, both in the engineering, running and construction departments, a new era in railroad building was inaugurated.

Each day taught us lessons by which we profited for the next, and our advances and improvements in the art of railway construction were marked by the progress of the work, 40 miles of track having been laid in 1865, 260 in 1866, 240 in 1867, including the ascent to the summit of the Rocky mountains, at an elevation of 8,235 feet above the ocean; and during 1868 and to May 10, 1869, 555 miles, all exclusive of side and temporary tracks, of which over 180 miles were built in addition.

The first grading was done in the autumn of 1864, and the first rail laid in July, 1865. When you look back to the beginning at the Missouri river, with no railway communication from the East, and 500 miles of the country in advance without timber, fuel or any material

whatever from which to build or maintain a road, except the sand for the bare road-bed itself, with everything to be transported, and that by teams or at best by steamboats, for hundreds and thousands of miles; everything to be created, with labor scarce and high, you can all look back upon the work with satisfaction and ask, under such circumstances, could we have done more or better?

The country is evidently satisfied that you accomplished wonders and have achieved a work that will be a monument to your energy, your ability, and to your devotion to the enterprise through all its gloomy as well as its bright periods; for it is notorious that, notwithstanding the aid of the government, there was so little faith in the enterprise that its dark days—when your private fortunes and your all was staked on the success of the project—far exceeded those of sunshine, faith, and confidence.

This lack of confidence in the project, even in the West, in those localities where the benefits of its construction were manifest, was excessive, and it will be remembered that laborers even demanded their pay before they would perform their day's work, so little faith had they in the payment of their wages, or in the ability of the company to succeed in their efforts. Probably no enterprise in the world has been so maligned, misrepresented and criticised as this; but now, after the calm judgment of the American people is brought to bear upon it, unprejudiced and unbiased, it is almost without exception pronounced the best new road in the United States.

Its location has been critically examined, and although the route was in a comparatively

### THREE STUDIES IN RAILROADING.

me determined upon, as compared with that devoted to other similar projects, yet to the correctness of the general route, no question is ever raised; and even details of its location, 730 miles of which were done in less than six months, it has won the praise of some of the ablest engineers of the country. Its defects have been easily remedied, and all the various commissions, some of them composed of noted engineers, have given the company due credit in this particular, although they criticized it in others, and to-day, as in the past, the company need fear no fair, impartial opinion upon it, or no examination made by men of ability and integrity, or successful masters of their profession.

It is yet needed work to finally complete it no one denies, but whatever is necessary is being done.

The future is bright with great good. It will develop a waste, will bind together the peoples of the nation as one, will stimulate intercourse and trade, and bring harmony and wealth to the two coasts. A proper policy, systematically and persistently followed, will bring to the road the trade of two oceans, and will give it all the business that the country can handle. While the local trade will increase gradually until the mining, grazing, and agricultural through traffic it passes will build up and create a business that will give it a permanent support to the country.

After General Dodge's paper had been read, General Baum (addressing the President

I move you, sir, that the hearty thanks of this Society be extended to General Dodge for his paper; that it be spread upon the Record, and be printed with the Annual Report.

The motion of General Raum was seconded and unanimously adopted.

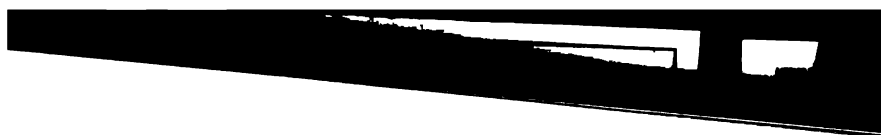
The President (General Sherman) said:

"I need not speak to an audience such as this in praise of the historic paper just read by General Dodge. It so happens that I was, before the civil war, during it, and since, deeply interested in the great problem of a Pacific railroad. Every word of General Dodge's paper is true, to my personal knowledge, and I endorse every proposition he has made.

"When the civil war was over, you all must remember that I was stationed at St. Louis, in command of all the troops on the Western plains as far out as Utah. I found General Dodge as consulting engineer of the Union Pacific Railroad, in the success of which enterprise I felt the greatest possible interest. I promised the most perfect protection, by the troops, of the reconnoitering, surveying and construction parties, and made frequent personal visits on horseback and in ambulance, and noticed that the heads of all the parties had been soldiers during the civil war. I firmly believe that the civil war trained the men who built that great national highway, and as General Dodge has so graphically described, he could call on any body of workmen to 'fall in,' 'take arms,' 'form platoons and companies,' 'deploy as skirmishers,' and fight the marauding Indians just as they had learned to fight the rebels down at Atlanta. I will not claim that all were of the Army of the Tennessee, but the heads of parties were all, or nearly all, *Union soldiers*.

“I was particularly interested in that part of General Dodge's paper wherein he described his discovery of the way to cross the Black Hills beyond Cheyenne (there was no Cheyenne then). He was limited by the law to 116 feet grade to any mile. Instead of following the valley of Lodge Pole creek, as all previous engineers had done, he chose the upper or anti-clinal line, instead of the lower or sin-clinal line. This was a stroke of *genius*, by which he surmounted the Rocky mountains at a grade of 80 feet to the mile, whereas by any other route then known he would have been forced to a grade of 200 feet, or to adopt *short* curves through Laramie pass.

“The Union and Central Pacific railroads were the pioneer trans-continental roads in America and every man who did his part should receive all honor. Now there are five trans-continental railroads, the last the Canadian Pacific.”





DRIVING THE LAST SPIKE, MAY, 1869.



## DRIVING THE LAST SPIKE OF THE UNION PACIFIC.

BY SIDNEY DILLON.

*Reprinted from Scribner's Magazine, August, 1892.*

The traveler over the Union Pacific Railroad in 1892 sees very few things aside from the physical features and general topography of the country through which it passes to remind him of the scenes which presented themselves to the view of those who composed the first excursion party over the completed road, and who witnessed, on May 10, 1869, at Promontory Point, Utah, the formal ceremony of driving the last spike. Nothing now marks the spot where this ceremony took place, and even the small station known as Promontory, is at some distance from the point where the connection between the two transcontinental roads was originally made. The whole aspect of the country, from the Missouri river to Salt Lake, has marvelously changed. Where there were then only tents, there are now well-built, substantial, and prosperous towns, and instead of the great desert wastes, supposed to be beyond reach of cultivation, one may now see an almost unbroken stretch of corn-fields and cultivated lands.

It is not too much to say that the opening of the Pacific road, viewed simply in its relation to the spread of population, development of resources, and actual advance of civilization

was an event to be ranked in far-reaching results with the landing of the Pilgrims, or perhaps the voyage of Columbus. In less than twenty-five years it has accomplished results which have influenced the whole world more than what happened in the century following the landing of the Pilgrims.

The five or six hundred men who saw the connection made at Promontory were strongly impressed with the conviction that the event was of historic importance ; but, as I remember it now, we connected it rather with the notion of transcontinental communication and trade with China and Japan than with internal development, or what railroad men call local traffic. We were somewhat visionary, no doubt, but none of us dreamed that the future of the Pacific roads depended more on the business that would grow out of peopling the deserts it traversed, than on the through traffic. We have not been disappointed in the stupendous results attained, but they are different from those we looked for, and of vastly greater consequence to the country. Our expectations concerning Asiatic trade, it must be owned, have fallen short of fulfillment, but the enormous development of local business has surpassed anything we could have ever dreamed of. Instead of being incidental and subordinate it is the chief business, the main dependence of the road, the through business for 1891 being only about five per cent., and the local ninety-five of the whole volume of traffic.

Nearly forty years earlier Asa Whitney, reading in China the account of the first experiment in railroad building in England, began to reflect upon the enormous changes the new invention made possible in bringing together remote sections of the globe ; and naturally enough,

his thoughts turned upon the possibilities opened to Asiatic commerce. So impressed was he with the feasibility of a railroad across the American continent as a means of rapid communication between the Asiatic ports and European countries, that he set to work at once compiling statistics concerning the trade of China, Japan, and India, with a view of directing public attention to the subject. He began his public work somewhere about 1841, and in 1845 secured a hearing before Congress. It was due almost entirely to his persistent efforts that the first appropriation for surveys was made in 1853. His proposition was to build a railroad from Lake Superior to Puget Sound, in consideration of a grant of land from the government to a certain amount over the whole line. Experience has shown that his plan was far from feasible, but he clung to it with the faith of an enthusiast, keeping it before the people and before Congress until he had sacrificed his own private fortune and became discouraged. About the time the present charter was passed he disappeared from the scene.

But the idea that a transcontinental railroad must depend chiefly upon the commerce of China and Japan continued to possess the public mind. How little thought was given to the development of the vast territory between the Missouri river and the Pacific is indicated by the fact that the examinations and surveys made by order of Congress included the isthmus routes and the possibilities for railroads or canals on the whole stretch of country from Panama north to the Canada line. The main thing was not to develop the country and make it habitable, but to get across it as quickly as possible. The gold discoveries in 1849, the large emigration in consequence, and the admission of California as a State, added an important ele-

ment to be considered, and contributed largely toward keeping the subject in the public mind. But the real objective point continued to be China and Japan and Asiatic trade.

Congress spent large sums of money between 1853 and 1860 in surveys of the country between the Missouri river and the Pacific ocean, the results of which were printed in large volumes, profusely illustrated, and distributed to the people at government expense. Beyond these tentative steps nothing could be effected. Political conditions prevented further progress. In the first place, the agitation of the slavery question occupied the attention of Congress to the exclusion of everything else; and out of the sectional jealousies engendered by that controversy had arisen differences as to the route to be adopted—whether a northern, southern, or middle—which were irreconcilable. Nothing could be done as long as those conditions continued. The South, which was then in the control of the government, would never consent to any northern route, and not a dollar of capital could be enlisted for the southern route recommended by Secretary of War Jefferson Davis.

But politics, which had so much to do in preventing progress, took a turn in 1860, which resulted in the enterprise being put in practicable shape and hurried forward with unexampled speed to completion. The charter of 1862 was rushed through Congress because the war had disclosed the dangers of the existing situation. Our Pacific coast and the new States of California and Oregon were from twenty to twenty-four days out of reach, and only accessible then by transit through a foreign country. The coast was almost entirely undefended, and the Trent affair had awakened anxiety in the direction of a war with Eng-

land, which the Confederate Admiral Semmes had intensified by the destruction of nearly a hundred whaling vessels in the Pacific ocean. The citizens of the new States were urgent for some action by Congress, and President Lincoln publicly and privately pressed the importance of the subject upon members of Congress and upon capitalists.

China and Japan were for the moment lost sight of, and the ruling thought in the public mind was as to the necessity for strengthening the Union by bringing its remotest coasts in quick and easy communication, as soon as possible, and at any cost. Even then the possibility of making the great intervening deserts habitable and populous and fruitful of profitable traffic, had not entered men's minds. Investigation showed that the transportation of mail, troops, munitions, and supplies between the Missouri river and the Pacific ocean was costing the government upward of seven million dollars annually. It was estimated that the road could be built for one hundred million dollars. So that simply to do its own work the government, had there been no constitutional hindrance, could well afford to issue its six per cents, for the amount, build the road, and save a million dollars annually on its own transportation.

The charter of 1862 was believed by Congress to contain sufficient inducements in the way of grant and subsidy loan to enlist the capital requisite to begin the enterprise. No one had any idea that the full capital would be subscribed or paid in. That was quite impossible. There were not many who believed the scheme was practicable. Most people consid-

upon the whole thing as visionary. Under the charter of 1862 nothing was done beyond effecting an organization. Capital held aloof from so unpromising a venture.

In 1864 the charter was amended, the land grant was doubled, and other changes made enlarging the inducements to capitalists to put enough money into the enterprise to give it a start. Even then, the practical railroad builders, who were extending to and beyond the Mississippi the lines of what are now the great systems of that section, after thorough examination of the subject, shrank from the undertaking. The Rock Island and the Northwestern were half way across Iowa, but still a long distance from their objective point, the Missouri river. To one of the other of these roads it would fall naturally to take hold of the Union Pacific charter, and under it extend its own line beyond the river. The franchise was more valuable to them than to any one else. Both looked the matter over, considered the whole subject, and shook their heads. They saw no money in it.

With experienced railroad builders so advantageously situated, taking this view of the enterprise, the difficulty of procuring subscriptions and raising money to start the work may be easily imagined. Enough subscriptions were made, however, to justify a beginning, though it was quite evident that very few of the subscribers had any expectation of a return on the investment either as interest or principal. The first instalments on these subscriptions furnished about money enough to pay the costs of a celebration on the occasion of breaking ground at Omaha in the autumn of 1864. This was quite an affair for Omaha and Council Bluffs, both of them at that time sprawling settlements, chiefly made of car

a two-story house in the whole outfit; but it did not make much impression on the outside world. Ground having been broken with proper ceremony, everything stopped. Durant and Bushnell, who were the leading spirits in obtaining the charter and effecting an organization, were hard at work raising money and vainly trying to get *bona-fide* subscriptions enough to warrant going ahead. The limitations of the charter were a fatal obstruction. It was only when these difficulties were surmounted by the device of a construction company that they began to see light.

This is not the place to treat of the operations of the Credit Mobilier. I have only to say, as its executive officer during the period of its activity, that in my judgment its methods were as legitimate and honorable as those of any corporation with which I have ever been connected; and, without it the Pacific railroad could not have been built. It was through this organization, having been in the business of a railroad contractor all my life, that I became interested in the Union Pacific; and I may say as evidence of my faith in the property that a large part of my original stock in the company is held by me to-day.

The advances made by the Credit Mobilier enabled the railroad company to go ahead, but on account of differences arising from a change in the original location of the line from Omaha west, work was delayed so that it was about the beginning of 1865 when construction may be said to have fairly begun. Some grading was done in the autumn of 1864, but the first rail was not laid till July, 1865. During 1865 we laid forty miles of track, on the acceptance of which by the government we received \$640,000, in government bonds—being



\$16,000 a mile—as a subsidy loan. The land grant was in addition to this, but was not available to meet current expenses. Our land-grant bonds and first mortgages were practically unsalable, and could only be used as collateral for loans made through the means of the construction company.

This money was a great help to us, though it came far short of relieving the pecuniary embarrassments which constantly beset us. Everything was done at enormous cost. None of the Iowa roads had reached the river, consequently all our materials, machinery, fuel, provisions, men, everything in fact, had to go to St. Louis and be transferred thence by boat to Omaha. The treeless plains furnished no ties, and we were obliged to transport them from remote points at very great expense. Ties for a long distance cost us sometimes \$2.50 a piece. The cost of labor and provisions was also greatly enhanced by the lack of direct communication with markets; and in the absence of wood or coal we were obliged to procure fuel from long distances at a frightful cost.

Affairs wore a very unpromising look at the close of 1865, and were not much better at the end of 1866, though we had laid 260 miles of track during the year. During 1867 we climbed to the summit of the Rocky Mountains, and added 240 miles of track, making about 540 miles of completed road beyond the Missouri river. At the end of that year, we were over the top of the mountains and nearly half way to Salt Lake City. The cost of building over the mountains was so much less than we had expected that the construction company found itself with a surplus from the proceeds of the subsidy bonds. This was imprudently



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distributed in dividends, so that in a short time we were in greater distress than ever for money. To add to our embarrassments the fact that we had reached the dividend point brought the harpers down on us from outside, and led to dissensions among ourselves. Nothing but the faith and pluck of the Amesese, fortified with their extensive credit, and the active financial aid of men like John I. Blair and other capitalists carried the thing through. Meantime the scene of active operation from the river to the mountains was attracting public interest and exciting public curiosity more and more every day. People who thought for a long time that the whole scheme was wild and visionary began after awhile to realize that out there on the "Great American Desert" an extremely interesting enterprise was afoot, and that whatever came of it one thing was certain, the world had never seen railroad building on so grand a scale under such overpowering disadvantages and at such a rapid rate of progress. It opened fresh fields to the newspaper correspondents and a theme of uncommon interest for the press. After the first year the newspapers of the country began to be filled with accounts of the progress of the work, with descriptions of the methods pursued in construction and the physical aspect of the country traversed. Public interest had gradually been wrought up in this way to such an extent that during the last year of construction it was the prominent topic; and the progress made in track laying was telegraphed all over the country each day. It culminated on May 10, 1869, when in all the large cities in the Union business stood still while the telegraph clicked the blows of the hammer that drove the last spike.

The chief engineer of the work, a man whose animating spirit had much to do with the

wonderful rapidity with which it was pushed, was General G. M. Dodge, who had explored the whole country from the Missouri river to Salt Lake as far back as 1853, when he was employed on the Rock Island road making surveys. He was an enthusiast who communicated enthusiasm to his working forces, and he showed skill in the management of hostile Indians, contractors, laborers, and the ruffians and gamblers who followed the camp. The close of the war, in which he distinguished himself, left him at liberty to accept this position of chief engineer, and his intimate relations with Grant and Sherman put him on such terms with commanding officers of garrisons and military posts along the route, that he was enabled to avail himself of military aid against marauding Indians, and also frequently in maintaining order when worthless camp-followers became unruly. With him were General Jack Casement and his brother Dan, in charge of the track-laying, men of boundless energy and undoubted courage, upon whom he could rely to carry out any order with military promptness and unquestioning obedience. The working force was almost entirely composed of discharged soldiers, whose experience during the war admirably fitted them to encounter the dangers from hostile Indians and endure the privations and hardships of camp life on the Plains. At an alarm of Indians these men fell into line and prepared to meet the attack with the readiness and decision of veteran soldiers.

During 1868, and to May 10, 1869, we laid five hundred and fifty-five miles of track, which took us to Promontory Point, just north of the shores of Salt Lake, where we met the track of the Central Pacific and made the connection between the two roads. For various reasons

co-operation of the telegraph companies, all the principal offices in the country were informed a few hours beforehand that as soon as the preliminaries were completed a signal would be given and every office being put in connection with Promontory; the blow of the hammer driving the last spike would be communicated by the click of the instrument at the same moment to every station reached by the wires.

General Dodge and the two Casements, and the force under them, were not idle during the night of May 9th and the early hours of the 10th. The rivalry between the two companies had been very sharp, and neither neglected an opportunity to gain an advantage. The tracks were only a few feet apart on the night of the 9th. During the evening General Dodge learned that the Central people had made their arrangements to put in sidings early next morning and secure possession of the terminus. But when in the grey of the morning the Central's construction train moved up they found, to their surprise, the sidings all laid and the rails occupied by the Union Pacific locomotives and cars. The Central people took it, on the whole, very good-naturedly, and did not permit it to disturb the general good feeling of the occasion.

It was not a large crowd. In brass bands, fireworks, procession, and oratory, the demonstration, when ground was broken at Omaha, less than five years before, was much more imposing. A small excursion party, headed by Governor Stanford, had come from San Francisco; while on our side, besides our own men, there were only two or three persons present, among whom was the Rev. Dr. Todd, of Pittsfield. Not more than five or six



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hundred, all told, comprised the whole gathering, nearly all of whom were officials of the two companies—contractors, surveyors, and employees.

The point of junction was in a level circular valley, about three miles in diameter, surrounded by mountains. During all the morning hours the hurry and bustle of preparation went on. Two length of rails lay on the ground near the opening in the road-bed. At a little before eleven the Chinese laborers began leveling up the road-bed preparatory to placing the last ties in position. About a quarter past eleven the train from San Francisco, bringing Governor Stanford and party, arrived and was greeted with cheers. In the enthusiasm of the occasion there were cheers for everybody, from the President of the United States to the day laborers on the road.

The two engines moved nearer each other, and the crowd gathered round the open space. Then all fell back a little so that the view should be unobstructed. Brief remarks were made by Governor Stanford on one side, and General Dodge on the other. It was now about twelve o'clock noon, local time, or about 2 P. M. in New York. The two superintendents of construction—S. B. Reed of the Union Pacific, and S. W. Strawbridge of the Central—placed under the rails the last tie. It was of California laurel, highly polished, with a silver plate in the center bearing the following inscription: "The last tie laid on the completion of the Pacific Railroad, May 10, 1869," with the names of the officers and directors of both companies.

Everything being then in readiness the word was given, and "Hats off" went clicking

over the wires to the waiting crowds at New York, Philadelphia, San Francisco, and all the principal cities. Prayer was offered by the venerable Rev. Dr. Todd, at the conclusion of which our operator tapped out: "We have got done praying. The spike is about to be presented," to which the response came back: "We understand. All are ready in the East." The gentlemen who had been commissioned to present the four spikes, two of gold and two of silver, from Montana, Idaho, California and Nevada, stepped forward, and with brief appropriate remarks discharged the duty assigned them.

Governor Stanford, standing on the north, and Dr. Durant on the south side of the track, received the spikes and put them in place. Our operator tapped out: "All ready now, the spike will soon be driven. The signal will be three dots for the commencement of the blows." An instant later the silver hammers came down, and at each stroke in all the offices from San Francisco to New York, and throughout the land the hammer of the magnet struck the bell.

The signal "Done" was received at Washington at 2:47 P. M., which was about a quarter of one at Promontory. There was not much formality in the demonstration that followed, but the enthusiasm was genuine and unmistakable. The two engines moved up until they touched each other, and a bottle of champagne was poured on the last rail, after the manner of christening a ship at the launching.

The event was celebrated in all the large cities, and everywhere hailed with demonstrations of delight. In New York, Trinity Church was thrown open at mid-day, an address was deliv-

ered by Rev. Dr. Vinton, and a large crowd united "to tender thanks to God for the completion of the greatest work ever undertaken by man." In Philadelphia bells were rung and cannon fired. At Chicago a great inpromptu demonstration took place, in which all citizens joined; at Buffalo a large crowd gathered to hear the telegraph signals, sang the "Star Spangled Banner," and listened to speeches from distinguished citizens; and at every important point the announcement of the completion of the work was received with unbounded joy.

That night our party started on their return, and the next day, May 11, 1869, trains began running regularly over the whole line. New York was in direct rail communication with San Francisco, and a new empire was thrown open in the heart of the continent.



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# THE WEST AND THE RAILROADS.

BY SIDNEY DILLON.

Ex-President of the Union Pacific Railway Company.

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The growth of the United States west of the Alleghanies during the past fifty years is due not so much to free institutions, or climate, or to the fertility of the soil, as to railways. If the institutions and climate and soil had not been favorable to the development of commonwealths, railways would not have been constructed; but if railways had not been invented, the freedom and natural advantages of the Western States would have beckoned to human immigration and industry in vain. Civilization would have crept slowly on, in a toilsome march over the immense spaces that lie between the Appalachian ranges and the Pacific ocean, and what we now style the Great West would be, except in the valley of the Mississippi, an unknown and unproductive wilderness.

Like many other great truths, this is so well known to the elder portions of our commonwealth that they have forgotten it; and the younger portions do not comprehend or appreciate it. Men are so constituted that they use existing advantages as if they had always

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existed, and were *friction matches* of course. The world went without friction matches during uncounted thousands of years, but people lighted their pipes without a thought as to the marvelous chemistry of the little instrument that was of inestimable value, and yet remained so long unknown. The youngster of to-day sits in a luxurious coach at New York, Philadelphia or Chicago, eats, sleeps, surveys romantic scenery from the window during a few days, and alights in Portland or San Francisco with no appreciation of the fact that a few decades since it would have required weeks of travel to go over the same ground, during which he would have run the risks of starvation, of being lost in the wilderness, plundered by robbers, or killed by savages. But increased facilities of travel are among the smaller benefits conferred by the railway. The most beneficent function of the railway is that of a *carrier of weight*. What would it cost for a man to carry a ton of wheat one mile? What would it cost for a horse to do the same? The railway does it at a cost of less than a cent. It brings Dakota and Minnesota into direct relation with hungry and opulent Liverpool, and makes subsistence easier and cheaper throughout the civilized world. The world should, therefore, thank the railway for the opportunity to buy wheat, but none the less should the world thank the railway for the opportunity to sell wheat.

Now among all the great politico-economical facts that have illustrated the world's progress, the one that has begun to be written, is so full of human interest or deals with such masses of human suffering, that it is not surprising that the interior United States since the railway opened to the sea has been a scene of such troubles. The irruption of the northern tribes upon the Roman

Empire bears no proportion to it, and was destructive in its results; and we may say the same as to the Napoleonic wars. These are among the most celebrated events of commonwealths on our planet, beginning and ending in bloodshed and enormous waste of capital. But within fifty years over thirty millions of people have been transplanted to or produced upon vast regions of hitherto uninhabited and comparatively unknown territory, where they are now living in comfort and affluence, and enjoying a degree of civilization second to none in the world, and greatly superior to any that is known in Europe outside of the capitals. And this could not have happened had it not been for the railway.

Through the same agency we have also reclaimed from nature immense tracts of land, that were worthless except as to their possibilities, which once seemed too vague and remote to be considered, and are to-day valuable. To mention one instance: There can now be seen in New York city samples of potatoes weighing over six pounds each, of heads of wheat representing a yield of sixty bushels to the acre, and of ears of Indian corn as large and full as any ever grown on the best lands of Virginia, that were produced on land near Boise City, Idaho, where formerly nothing grew except sage-brush, and which was a part of an alkali desert. Railways have virtually changed the character of the soil, not in any miraculous manner, but by encouraging legitimate methods of civilization and irrigation; and they have also changed the climate. The farmer plants trees, and these trees check the bitter north winds, and also cause an increased rainfall; he turns up the ground which formerly offered to the sky nothing but one uniform, smooth and iron-hard surface, and these vast extents of ploughed



land not only create a rainfall by their evaporation, but invite rains by their contrasts of temperature. Whether this is a correct explanation of a fact is little to the purpose, the fact remains. Since the railway opened the great central and western plateaus to cultivation, the climate has become milder, the cold less destructive and the rainfall greater. Large areas that were considered uninhabitable are now inhabited by a rapidly increasing population, and opulent cities, where capital becomes concentrated and productive, are met with nearly as numerous as in the East.

But although these benefits arising from railway construction are so obvious, no one asserts that railways have been laid from philanthropic motives; and therefore, since among the promoters, contractors, and capitalists who have done the work we find men who have acquired large fortunes, western railroad construction and management in general have been bitterly and frequently attacked by the press, and have been and now are the subject of much hostile legislation. Grave charges are made; as, for instance, that the roads have in numerous instances been fraudulently over-capitalized and excessively loaded with bonded debt; that they monopolize traffic; that they charge unjust rates of freight in order to pay dividends on fictitious values of stock; that they favor one class of shippers at the expense of another class; that they permit the accumulation of unreasonably large fortunes, and to use a favorite phrase of demagogic orators, constantly "tend to make the rich richer and the poor poorer."

Legislation has been called in to give force to the theories involved in these declamations, particularly in the States west of the Mississippi, which happen to be the communities that

owe their birth, existence, and prosperity to these very railways. Statutory enactments interfere with the business of the railway, even to the minutest details and always to its detriment. This sort of legislation proceeds on the theory that the railroad is a public enemy; that it has its origin in the selfish desire of a company of men to make money out of the public; that it will destroy the public unless it is kept within bounds; and that it is impossible to enact too many laws tending to restrain the monster. The advocates of these statutes may not state their theory in these exact words; but these words certainly embody their theory, if they have any theory at all beyond such prejudices as are born of the marriage between ignorance and demagogism.

Many of the grievances that are urged against railways are too puerile to be seriously noticed but the reader will pardon a few words as to "over-capitalization." Capital is in itself an unknown quantity, and its value depends wholly upon its productive uses, which are distinguished from its productive powers in this—that the powers may or may not be exercised, while the uses yield certain profitable results. The gold that is now locked up by nature in the western mountains is not yet capital, because, although we know it is there, we do not know how much it will cost to reduce it to possession. The gold coin that lies in the vaults of our banks is capital, but a large part of it is held as reserve, and, except as it tends to sustain public confidence, it has no direct productive uses whatever, and, except as to confidence-sustaining quality, has no more earning value than a pile of gravel.

Now, a railway is simply a manifestation of capital put to work; of human industry in its

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highest development applied to earning wages: it is a thousand men condensed into one, and this one doing the work of a thousand men stand in a straight line five feet apart, they will move a thousand sacks from one end of the line to the other in just the time that a freight car will carry the same ton one mile. Now, it is impossible to estimate in advance the product of this useful and untiring servant. Sometimes a railway is capitalized too large when it pays smaller dividends; sometimes not largely enough, and then the dividends are much in excess of the usual interests of money. In the former case stockholders are willing to reduce the face of their shares, or wait until increase of population increases revenue; in the latter they accept an enlarged issue. But, as a matter of reason and principle, the question of capitalization concerns the stockholders, and the stockholders only. A citizen, simply as a citizen, commits an impertinence when he questions the right of any corporation to capitalize its properties at any sum whatever.

Unquestionably, the citizen, if his farm is in the direction of a projected railway, is liable to be compelled to make a sale to the company of a strip of his land; but a competent jury assesses the value, and such valuers rarely favor the company. The citizen's farm is then worth more than it was, and he can send his produce to market at a cheaper rate. But all this does not make it his business to question the right of the company to bond its road at any given sum per mile, or to issue stock thereafter to any given amount. Such transactions

are wholly matters of private contract; and under the common law, and the laws of nature that govern all possible events, they regulate themselves.

All civilized communities in which self-government is recognized are perpetually trying to regulate matters of private contract by statute, and are perpetually failing to do so. It is a proverb in Great Britain and the United States that the chief wisdom of legislatures is shown in repealing the statutes enacted by previous legislatures. England is great to-day, not by virtue of what Parliament has enacted, but by virtue of the intelligence and industry of her people working under natural conditions restored to usefulness by virtue of the repeal of acts of Parliament. Our citizen whose fields have been crossed by the railroad, and whose right of way over the turnpike is occasionally interrupted by the locomotive, may fancy that it is for the interest of himself and his neighbors to induce the legislature to regulate the prices of fares and freights on the railway, but he ignores the great laws that overrule all such enactments.

Such enactments are useless as to the rights and liabilities of railway corporations, because the common law has long since established these as pertaining to common carriers, and the courts are open to redress all real grievances of the citizen. Then as to prices, these will always be taken care of by the great law of competition, which obtains wherever any human service is to be performed for a pecuniary consideration. That any railway, anywhere in a republic, should be a monopoly, is not a supposable case. If between two points, A and B, a railway is constructed, and its charges for fares and freight are burdensome to the public and

unduly profitable to itself, it will not be a long time before another railway will be laid between these points, and then competition may be safely trusted to reduce prices. We may state it as an axiom that no common carrier can ever maintain burdensome and oppressive rates of service permanently or for a long period. Rates may seem burdensome, but may not be oppressive. A road may be enormously expensive to build; its grades may demand excessive expenditure of fuel and be wearing to the rolling stock; such a road obviously cannot carry freight and passengers as cheaply as some other road that is laid over a plain. But if these difficulties exist between A and B, their citizens must be content to compensate the people who open the communications which are needed, and who were bold enough to risk a great capital in doing so; they should not seek to cripple their operations by procuring hostile legislative enactments.

Calculations based upon the law of competition have this advantage over those based upon the enactment of statutes: that the foundations on which they rest are immutable, and not only so in their own right, but they cannot be changed by any process whatever, Statutes can be overridden and evaded while they exist on the books, and be repealed by the same authority that created them; courts can construe them so rigorously that their vitality shall be squeezed out of them; but no power can prevent one man or set of men from offering to perform a lawful service at lower rates than another. The operation of this great law is visible everywhere, and needs no interpreter. People who have money to lend compete with each other in lending on the best class of securities at much less than lawful interest

in all the great money markets. On such securities borrowers do not need the protection of usury statutes; and on the great mass of insecurities that swarm in the same markets the competition of borrowers induces the offering of much more than legal interest, and the usury statutes are of no benefit. The laws of human action based on the mental constitution and reason of men forever bid defiance to statutes.

As one result of competition, we may instance the freight charged upon wheat from Chicago to New York by all-rail in 1868 and in 1890. In 1868 it was 42.6 cents per bushel; in 1890 14.31 cents. This illustrates the beneficent effect of competition between rival lines both to producers and consumers; but the benefit does not stop here. This competition brought down the charges by all-water (lake and canal) from 22.79 cents in 1868 to 5.85 cents in 1890. It will not answer to argue that the water rates have reduced the rail rates. Shippers prefer rail transportation; grain arrives in better condition, in shorter time, with smaller insurance rates; bills of lading are much more negotiable, and interest charges are lessened. The greater controls the less; the superior makes the standard for the inferior; and when in twenty-two years the railway reduces its freight charges 66 per cent., the propeller and canal-boat are compelled to reduce their charges 75 per cent. For this reduction the shippers by water may thank the railroads, even if they do not use them.

Similar reductions have taken place in rates from remote western points to Chicago and St. Louis, although in this case there was no rivalry with water except as to the narrow grain production tending eastward by way of Lake Superior. The rivers emptying into the Missouri



and Mississippi from the west may be, as whole, classed as unnavigable; hence, the grain production of the Dakotas, Nebraska, and other Western States must be moved by the railroads. And this necessity has been the parent of so many railroads that competition has brought rates down to a point where profit to the carrier has almost disappeared. Where rival companies are underbidding each other for business, no acts of a legislature are necessary to prevent them from putting up rates. Reason and facts both clearly lead to this conclusion.

There is a great deal of declamation on the part of the press as to railway combination and monopoly and their injurious results to the people; but we venture to state that "combinations" do not combine, and "monopolies" whose constant tendency during a long series of years has been to bring producers and consumers into closer relations with each other and lessen the cost of living to both, deserve praise and support rather than censure and adverse legislation. And if there does, indeed, exist between the railroad owners and the public a strife between capital and labor, as we are informed by so many people who profess to be able to cure the disease of poverty if we will only give them all the property of the nation to start with, it certainly looks as if capital was getting the worst of the battle.

It is not a long time since the bondholders and shareholders of American railways were, as a rule, receiving as interest or dividends from 7 to 8 per cent. per annum. These usufructs have almost universally dwindled to 5 and 4 per cent. Coincident with this fact there is a diminution of the market value of shares; all of which is to the disadvantage of capital. Wages have not shrunk in anything like this ratio; and since the necessities of life are all

cheaper than they were when bondholders were drawing 7 per cent. interest, we may safely say that the purchasing power of wages in the generality of occupations that are compensated in wages is as great as ever. And if a laborer wishes to capitalize, he can buy as much railroad stock now with the earnings of a hundred days as he ever could. In fact, if it were pertinent to the subject, we think we could show that we could buy more. But we only care to establish the proposition that railways are not oppressive engines of capital, and are not the enemies of labor; but that they are, in sober truth, the best friends to-day of the American people, and that they are in a large degree the means and the evidence of the unexampled prosperity of the United States.

Some of your readers may think that we have given too much space to the discussion of legislative enactments touching railways, and especially the railways of the Western States; but we feel that the importance of the subject might well employ longer time and better argument than we are able to furnish. One of the greatest dangers to the community in a republic is this: that it is in the power of reckless, or misguided, or designing men to procure the passage of statutes that are ostensibly for the public interest, and that may lead to enormous injuries. Let us imagine, for a moment, that all the railways in the United States were at once annihilated. Such a catastrophe is not, in itself, inconceivable; the imagination *can* grasp it; but no imagination can picture the infinite sufferings that would at once result to every man, woman, and child in the entire country. Now, every step taken to impede or



cripple the business and progress of our railways is a step toward just such a catastrophe, and therefore of a destructive tendency.

We do not arrogate superior wisdom or intelligence to ourselves when we suggest to the people of the United States, and especially of that portion of the country where railways have been the subject of what we consider to be excessive legislation, that the rational mode of treating any form of human industry that has for its object the performance of desired and lawful services is to let it alone, and that the railway is no exception to this principle. The best government is that which governs least, not because the best government is that which overlooks trespassers, but because in a community where there were no trespassers, a government of correction or restraint would not be needed.

Given a company of men pursuing a lawful and useful occupation,—why interfere with them? Why empower a body of other men, fortuitously assembled, not possessing superior knowledge, and accessible often to unworthy influences, to dictate to these citizens how they shall manage their private affairs? Wherever such management conflicts with public policy or private rights, there are district attorneys and competent lawyers and upright courts to take care that the commonwealth or the citizen shall receive no detriment. Even as to such matters of public interest as the crossing of highways and the management of trains through large cities, if we were obliged to choose between excessive and meddlesome legislation and no legislation at all, the latter would be preferable. If a company neglects to slow up its trains at a turnpike crossing or to sound proper alarms, let juries inflict the penalty in com-

mensurate and exemplary damages. Greater care would then be exercised than under existing statutes ; and because a statute is always a double-edged sword, it is as easy to plead compliance as evasion ; and if the statute sets six miles an hour as the limit at the crossing, the sworn testimony of the expert engineer that he was within the statute is more valid than that of the inexpert bystander or passenger which avers the contrary. But where under the common law the company is *prima facie* guilty of trespass, it must make out a very clear case of contributory negligence to escape the penalty.

We must not forget that the great majority of the railways in the United States are the creation of private enterprise and capital, and that the people in their collective capacity have not been taxed in order to construct them. The exceptions are certain corporations whose work has done more to open the vast territory between the Pacific and the Mississippi to civilization and the uses of the nation than any other agency. Land has been given to these railways, and in a few instances the credit of the government has been lent. The land was at the time almost worthless, and but for these railways would have remained so during a long period ; the credit although not yet, will undoubtedly be repaid, and meantime the government has a lien upon the property.

In regard to one of these companies—perhaps the one that has been the subject of more misrepresentation and abuse than any other—we may be pardoned for quoting a few words by the Hon. Jesse Spalding, himself a government official, written in 1889, in his report to the United States Secretary of the Interior.

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"I found people in Nebraska who are possessed with the idea that the Union Pacific was constructed for, and who actually consulted by the managers before any improvements were extensions pushed forward. In the minds of such people the road has done more for the State than the State had done for the road never dreamed to arise. Those who take an unreasoning and, to my mind, a most unjust view of the conduct of the Union Pacific, are exceptions to the rule. Among the most advanced thinkers of Nebraska a different feeling exists and different opinions prevail. They point out with just and pardonable pride the wonderful strides which the young State has made since the Union Pacific Railway was constructed. They call your attention to the beautiful, bustling and wealthy city of Omaha, with its 140,000 inhabitants, to the handsome and progressive State capital, Lincoln, with its 60,000; to Grand Island, with its 15,000; to Beatrice, with its 12,000; to Fremont, with its 10,000; and Hastings, with its 13,000, and to a hundred thriving towns and cities along the lines of the main stem and its branches, the growth of all of which is directly due to the facilities for the receipt, distribution and shipment of commodities and manufactures afforded by the Union Pacific System."

And again, as a closing voucher for our assertion that the West is under enormous obligations to railways, from the same report.

"The growth of the whole country from the Missouri River to the Rockies is surprising. One sees nothing but signs of life and evidences of progress on all sides. The smallest ham-

lets are imbued with the same spirit that characterizes the larger towns and cities. The people are everywhere enterprising, energetic and industrious. Improvements, innovations and inventions that the East has not yet had time to adopt, to make or to utilize are to be found in full operation in these new communities. Small towns in the far West have a better system of street railways and street illumination than the great cities of the East. Street cars drawn by horses, in the minds of Western people, belong to the remote past. It is a slow town, indeed, that has not got its cable or electric railway, or that depends upon gas as a street illuminator. While there has been an unhealthy inflation in the price of real estate in many of those towns, my observation was that most of them had passed safely through the dangerous speculative period of their existence, and are now growing steadily and solidly. But few of the towns which have attracted attention by reason of their sudden, rapid or mushroom growth during the past twenty years, have disappointed those who cast their lots with them. They are nearly all well situated, and, in my opinion, are destined to continue growing in population and wealth for many years to come. Manufactories of all kinds are everywhere welcomed and encouraged, morally and substantially; mining in some sections is only yet in its infancy; industries of all kinds find a constantly growing market, the agricultural districts are expanding month by month; there is nothing, apparently, to check the tide of prosperity."

SIDNEY DILLON.

## THE LAST SPIKE OF THE UNION PACIFIC RAILWAY.

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In *The Railway Age and Northwestern Railroader* of July 29, 1892, we reproduced from *Scribner's Magazine* for August last, an illustration of the driving of the last spike of the Union Pacific Railway on May 10, 1869. In the article in the magazine, it was stated that the photographs from which the illustration was made was believed to be the only one in existence. That this was an error has been called to our attention by Mr. Lewis Anderson, of Chicago, who was, in 1869, yardmaster in the employ of the Union Pacific Railway. Mr. Anderson has loaned to us, not only a duplicate of the photograph from which the illustration already produced was made, but also two other views of the interesting ceremony, either of which is, perhaps, better than the one which has already been shown. We give reproductions herewith. In the groups many well-known faces may be found (among others Mr. Anderson is there himself), and, as the reproductions show, the photographs are excellently preserved after 23 years.—*Railway Age, Chicago, October 1892.*